

EXHIBITIONS AND NOTICES.

February 9, 1915.

R. H. BURNE, Esq., M.A., Vice-President,
in the Chair.

The SECRETARY read the following report on the Additions made to the Society's Menagerie during the months of November, December, and January, 1914-5 :—

NOVEMBER.

The number of registered additions to the Society's Menagerie during the month of November was 58. Of these 42 were acquired by presentation, 9 were received on deposit, and 7 in exchange.

The number of departures during the same period, by death and removals, was 177.

Amongst the additions special attention may be directed to :—

2 Elands (*Taurotragus oryx*), from S. Africa, presented by A. H. Wingfield, F.Z.S., on November 18th.

DECEMBER.

The number of registered additions to the Society's Menagerie during the month of December was 52. Of these 27 were acquired by presentation, 18 were received on deposit, 3 in exchange, and 4 were born in the Gardens.

The number of departures during the same period, by death and removals, was 137.

Amongst the additions special attention may be directed to :—

1 Peter's Dwarf Mongoose (*Helogale undulata*), from Wangi, Taland, E. Africa, new to the Collection, deposited on December 1st.

1 Golden-eared Honey-eater (*Ptilotis chrysotis*), from New Guinea, new to the Collection, presented by Alfred Ezra, F.Z.S., on December 7th.

2 Red-crowned Fruit-Pigeons (*Alectonanas pulcherrima*), from the Seychelles, received in exchange on December 21st.

JANUARY.

The number of registered additions to the Society's Menagerie during the month of January was 30. Of these 22 were acquired by presentation, 1 by purchase, 3 were received on deposit, 2 in exchange, and 2 were born in the Gardens.

The number of departures during the same period, by death and removals, was 132.

Amongst the additions special attention may be directed to :—

1 Sing-Sing Waterbuck (*Cobus defassa*), ♀, from Senegambia, presented by A. H. Wingfield, F.Z.S., on January 26th.

1 Squirrel-Monkey (*Saimiris sciurea*), from Demerara, and
1 Potto (*Potos caudivolvulus*), from Colombia, presented by
Gordon R. W. Hutton on January 27th and 31st.

2 Senegal Genets (*Genetta senegalensis*), from Zaria, Nigeria,
presented by Charles Migeod on January 19th.

1 Peter's Spotted Fire-Finch (*Lagonosticta niveiguttata*), from
E. Africa, new to the Collection, received in exchange on January
11th.

*The Application of X-rays to Microscopical research; illustrated
by Skiagraphs revealing the internal structure of Foraminifera.*

MR. E. HERON-ALLEN, F.L.S., F.Z.S., brought before the Society
a new method of determining the internal structure of the
Foraminifera without transparent mounting or section-cutting,
or other interference with the specimens, by means of Skiagraphs.
These have been made by Mr. J. E. Barnard. A series of slides
was exhibited showing:—(i.) The first experiment made for the
purpose of ascertaining the structure of a Foraminifer of a new
type, and of extreme rarity found in the Kerimba Archipelago
(E. Africa). (ii.) An ordinary North Sea dredging showing the
internal structure of the Foraminifera as if they had been mounted
in balsam. (iii.) Thick and dense tests of *Massilina secans*
(d'Orbigny) and Skiagraphs of the same. (iv.) The still thicker
and denser tests of *Biloculina bulloides* d'Orbigny, the Skiagraphs
showing the arrangement of the earlier chambers. (v.) *Cornuspira
foliacea* (Philippi). The dense imperforate shells, and Skiagraphs
revealing micro- and megalospheric primordial chambers. (vi.)
Coarse and densely agglutinate tests of the arenaceous species
Astrorhiza arenaria Norman, and Skiagraphs revealing the cavi-
ties containing the protoplasm body. (vii.) Two monothalamous
arenaceous types of similar external appearance. The Skiagraphs
reveal that one is *Botellina labyrinthica* Brady, and the other
Jaculella obtusa Brady. (viii.) The dense hyaline tropical species
Operculina complanata Defrance, with the obscuring papillæ
constituting the var. *granulosa* of Leymerie, the Skiagraphs
revealing curious distortions of some of the internal septa. (ix.)
The equally dense species *Orbiculina adunca* (Fichtel & Moll), the
central chambers obscured by thick shell-growth which does not
affect the Skiagraph. (x.) The coarse and solidly built arenac-
eous species *Cyclammina cancellata* Brady, the dense cement shell
studded with sandy particles. These disappear in the Skiagraph,
which shows the labyrinthic structure and a megalospheric
primordial chamber. (xi.) A Nodosarian, showing the method of
growth by the addition of successive chambers. [From (vi.) to
(xi.) were shown in two states, (a) in black on a white ground
and (b) reversed.] (xii.) The common tropical form *Orbitolites
complanata* Lamarck, the Skiagraphs showing the Milioline early
chambers. Shells of this species were also exhibited which had

been skiagraphed to ascertain whether they were in the process of viviparous reproduction described by Brady*.

The speaker's views upon the importance and ultimate potentialities of this new method of research have been set out at length in the Proceedings of the Royal Microscopical Society (Jan. 20th, 1915). At present the definition and resolution of these internal structures is limited by the fact that the original Skiagraph is not a magnification, the magnification being produced by projection; but it appears more than likely from the experiments of Mr. Barnard that a newer process of Microskiagraphy will, before long, give results which may ultimately yield information of the highest biological value in relation to the structure and functions (behaviour) of simple protoplasmic organisms. When this difficulty has been overcome Messrs. Heron-Allen and Barnard propose to continue these experiments upon *living* Foraminifera, and they see no reason why, in the near future, the nucleus should not be resolved, and some of its functions photographed in the living condition.

The Stomach and Intestines of the Open-bill.

Dr. P. CHALMERS MITCHELL, F.R.S., F.Z.S., Secretary to the Society, exhibited preparations made from two examples of the Indian Open-bill (*Anastomus oscitans*) which had recently lived in the Society's Gardens, and remarked as follows:—"In dissecting these birds I noticed two peculiarities which do not appear to have been described before. The Open-bill is stated to live on shell-fish and the conformation of the bill is described as forming a sifting apparatus. In the stomach there is an elaborate arrangement which would serve as a sifting organ to prevent large particles from passing into the duodenum. The stomach is divided into a soft-walled glandular proventriculus, separated by a constriction from a muscular gizzard, the lining membrane of which consists of a hardened layer of secretion, as in most birds with a gizzard. This communicates by a wide aperture with an elongated, rather small cardiac chamber, which is soft-walled and opens into the duodenum. The wall of the gizzard is raised in a strong, crescentic fold which blocks the aperture into the cardiac chamber, the free margin of the fold being frayed into flat plates placed like the teeth of a comb. The ridge and plates are covered with the hardened secretion lining the general cavity of the gizzard, and particles of food can reach the intestines only after being squeezed through these plates. The gizzard in each specimen was nearly full of large stones.

The second peculiarity related to the colic cæca. In Herons only one of these is present, but in Storks the normal pair occurs. In both examples of *Anastomus*, which has always been regarded as a stork, only one of the two cæca was present, as in *Baleniceps*."

* J. R. Micr. Soc. 1888, pp. 693-697, pl. x.

Sir EDMUND G. LODER, Bt., F.Z.S., exhibited the tanned skin of a large Capybara (*Hydrochoerus hydrochoerus*), which he suggested might be identical with the "pigskin" of commerce, and the skull of a Walrus (*Trichechus rosmarus*) from Kamschatka, with record tusks. The weight of the skull and tusks was about 40 lbs. The tusks alone weighed $21\frac{1}{2}$ lbs., and measured $36\frac{1}{2}$ inches in length, $29\frac{1}{2}$ inches from outside the gum, and $9\frac{5}{8}$ inches in girth.

Mr. GUY AYLMER, F.Z.S., exhibited some skins of mammals from Sierra Leone, including those of a Serval (*Felis capensis*) and of a Servaline Cat (*F. servalina*), and stated that a native had brought him two kittens, almost certainly from the same litter, one being spotted like the Serval and the other obscurely speckled like the Servaline Cat. This he regarded as proof that the differences between the Servals and Servaline Cats are of no systematic importance.

February 23, 1915.

Prof. E. W. MACBRIDE, D.Sc., F.R.S., Vice-President,
in the Chair.

Dr. P. CHALMERS MITCHELL, F.R.S., F.Z.S., Secretary to the Society, exhibited mounted examples of three species of Cockroach, *Periplaneta americana*, *P. orientalis*, and *Phyllodronia germanica*, all of which had established themselves in different houses in the Society's Gardens, and stated his wish that some naturalist would endeavour to work out the causes of the selective distribution of these insects.

Mr. R. I. POCKOCK, F.R.S., F.Z.S., Curator of Mammals, exhibited, on behalf of Mr. EDWARD GERRARD, the mounted head of a male Sitatunga Antelope (*Limnotragus*) shot by Capt. H. D. Bentinck on the Bahr-el-Ghazal. Instead of being dark brown, the colour characteristic of the males of this buck, the head was whitish brown, suggesting that the individual was a partial albino.

Mr. D. SETH-SMITH, F.Z.S., Curator of Birds, exhibited, on behalf of Mr. EDWARD GERRARD, a pair of Daurian or Bearded Partridges (*Perdix daurica*), which had recently been purchased in the flesh at a poulterer's shop in London. Numbers of these partridges arrive in London and other large European towns every winter in a frozen state, and are sold under the name of "Russian" or "Manchurian Partridges." The species inhabits

Central and Eastern Asia, and may readily be distinguished from the Common Partridge, *P. perdix*, by its paler colour, the elongated feathers on the sides of the throat, and by the black horseshoe patch on the breast.

Miss ANNIE C. JACKSON exhibited some living male specimens of the Indian Stick-Insect, *Caransius morosus*, and remarked:—
“The male of this species was figured by Redtenbacher in his monograph ‘Insektenfamilie der Phasmiden’ without any comment as to its rareness or otherwise. When, however, the species is bred in captivity males are very rare, and I believe I am right in saying that hitherto, though many insects have been bred in this country, only one male has been observed. Last year I reared about 3000 stick-insects and among them identified seven males. The female stick-insect you are doubtless familiar with, as there are many in the insect-house here. The male differs from the female in its smaller size and more slender appearance, and the antennæ and legs are proportionately longer. The red vermilion colour present in the adult female on the inner side of the femur of the front legs is absent; on the dorsal surface of the thorax there are two small red marks, while on the ventral surface both meso- and metathorax are streaked with red; in some females, however, the ventral surface of the thorax is similarly marked. One of the males differed from the others in having one of the front legs with a patch of red as in the adult female, the other one being normal; the leg with the red patch is distinctly shorter than the other, which suggests that the insect at an earlier stage lost the leg and developed this one in its place, as it has the power of doing, but why it should have grown one resembling that of an adult female I am unable to explain.”

March 9, 1915.

R. H. BURNE, Esq., M.A., Vice-President,
in the Chair.

The SECRETARY read the following report on the Additions made to the Society's Menagerie during the month of February 1915:—

The number of registered additions to the Society's Menagerie during the month of February was 62. Of these 27 were acquired by presentation, 5 by purchase, 25 were received on deposit, 2 in exchange, and 3 were born in the Gardens.

The number of departures during the same period, by death and removals, was 129.

Amongst the additions special attention may be directed to:—

2 Azara's Dogs (*Canis azarica*), from Santa Fè, Argentina, presented by George O'Donnel on February 10th.

1 Red Kangaroo (*Macropus rufus*) ♂, from Australia, presented by Capt. F. Dent on February 26th.

Dr. R. BROOM, M.D., C.M.Z.S., exhibited a skull of *Chrysochloris asiatica* with four upper molars on each side. On November 24th, 1914, Dr. Broom exhibited a skull of *Chrysochloris hottentota* with only one molar on each side above. A few species of *Chrysochloris* have normally two molars, and used to be placed in the genus *Amblysomus*. But *Chrysochloris namaquensis* has one-third of the known specimens with two molars, one-third with three molars, and the rest with two molars on one side and three on the other. Most species of *Chrysochloris* have three molars. The specimen exhibited shows that even the type species is variable.

The following reports on the collections made by the British Ornithologists' Union Expedition and the Wollaston Expedition in Dutch New Guinea were read, and Mr. W. R. OGILVIE-GRANT gave a short account of the expeditions and the results obtained:—

Coleoptera. By G. J. ARROW, G. A. K. MARSHALL, F.Z.S., and C. J. GAHAN.

Diptera. By F. W. EDWARDS, B.A., F.E.S., and E. E. AUSTEN, F.Z.S.

Odonata. By HERBERT CAMPION.

Vermes. By Dr. L. COGNETTI DE MARTIIS.

These reports will be published in the 'Transactions.'

NOTICE.

In my "Description of a new Lizard from the Canary Islands" (P. Z. S. 1914, p. 681) unfortunately a slight error occurred in the dimensions given of the head of *Lacerta caesaris*:—

Instead of "Width of head $\frac{1}{3}$ of the length" it should be "Width of head $\frac{2}{3}$ of the length."

(Signed) PH. LEHRS.

March 5th, 1915.